

CLAIMS

1. A method for cementing a borehole which penetrates a subterranean formation wherein the temperature of said formation is in the range of from about 40°F to about 100°F, said method comprising forming a slurry of hydraulic cement in water, said slurry having a density ranging between 0.9 and 3g/cm³, placing said slurry in said borehole adjacent said formation and permitting said slurry to set in said borehole; and wherein said slurry is comprised of water, hydraulic cement and a set-accelerating admixture comprising an alkali or alkaline earth metal nitrate and an alkali or alkaline earth metal nitrite.
2. The method of claim 1, wherein said set-accelerating admixture comprises calcium nitrate and calcium nitrite salts in a weight ratio of from about 1:3 to about 3:1.
3. The method of claim 2, wherein said set-accelerating admixture comprises calcium nitrate and calcium nitrite salts in a weight ratio of from about 1:1.
4. The method of claim 1, wherein said set-accelerating admixture further comprise glycols.
5. The method of claim 4, wherein said glycols are C2 to C6 aliphatic di- and tri-hydric glycols.
6. The method of claim 5, wherein said glycol is diethylene glycol.
7. The method of claim 1, wherein said set-accelerating admixture further comprise alkanolamines.
8. The method of claim 7, wherein said alkanolamines are selected from the group consisting of compounds having the formula:



where R1 and R2 are hydroxyalkyl groups in C1-C4, and R3 is a C1-C5 alkyl groups.

9. The method of claim 8, wherein said alkanolamine is selected from the group consisting of methyl and ethyl diethanolamine

10. The method of claim 1, wherein said set-accelerating admixture consists of calcium nitrate, calcium nitrite, diethylene glycol, methyldiethanolamine and calcium bromide in a proportion of 42:42:10:3:3 by weight in water, with a solid content between 45 and 50%.
11. The method of claim 1, wherein said set-accelerating admixture is added to the cement composition in an amount that provides a total salt in the range of about 3 to about 20g per kg of cement.
12. The method of claim 10, wherein said set-accelerating admixture is added to the cement composition at a concentration of about 4 to about 45 cm³ per kg of cement.
13. The method of claim 1, wherein said slurry is foamed.
14. The method of claim 1, wherein said slurry further comprises at least additives selected from the group consisting of fluid loss control additives, gas migration control additives, dispersants.
15. The method of claim 1, wherein the setting temperature is in the range 40°F to 70°F.